

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H03D13/00 H03L7/089

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H03L H03D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 712 580 A (BAUMGARTNER STEVEN JOHN ET AL) 27 January 1998 (1998-01-27) cited in the application	1,8-10
A	column 2, line 34 - column 3, line 48; figure 1	2-7
X	US 2002/135400 A1 (LIU HUNG-CHIH ET AL) 26 September 2002 (2002-09-26)	1,8-10
A	column 1, paragraph 7; figures 2,3 paragraph '0019! - paragraph '0025!	2-7
X	US 2001/031028 A1 (VAUCHER CICERO SILVEIRA) 18 October 2001 (2001-10-18)	1,8-10
A	paragraphs '0024! - '0031!; figures 2-5a	2-7
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- *&* document member of the same patent family

Date of the actual completion of the international search

21 July 2004

Date of mailing of the international search report

28/07/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Ratajski, A

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 314 151 B1 (FUKAISHI MUNEO) 6 November 2001 (2001-11-06) column 3, line 46 - column 4, line 17; figure 4 -----	1-10
A	US 5 619 171 A (RIJCKAERT ALBERT M A ET AL) 8 April 1997 (1997-04-08) column 2, lines 42-64; figure 2 -----	1-10

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5712580	A	27-01-1998	NONE	
US 2002135400	A1	26-09-2002	TW 474064 B	21-01-2002
US 2001031028	A1	18-10-2001	WO 0167612 A1	13-09-2001
			EP 1183781 A1	06-03-2002
			JP 2003526984 T	09-09-2003
US 6314151	B1	06-11-2001	JP 3094971 B2	03-10-2000
			JP 11112335 A	23-04-1999
US 5619171	A	08-04-1997	EP 0741931 A1	13-11-1996
			WO 9610296 A1	04-04-1996